



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,826	12/03/2001	Young-Bin Im	P56640	7185

7590
Robert E. Bushnell
Suite 300
1522 K Street, N.W.
Washington, DC 20005

01/29/2003

EXAMINER

COLON, GERMAN

ART UNIT	PAPER NUMBER
----------	--------------

2879

DATE MAILED: 01/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	09/998,826		IM ET AL.	
	Examiner		Art Unit	
	German Colón		2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7,9 and 10 is/are rejected.
- 7) ☐ Claim(s) 3 and 8 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 4, 6, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmae (US 6,388,370) in view of Ueda (US 5,856,725).

Regarding claim 1, Ohmae discloses a tension mask assembly or a flat CRT comprising:

a tension mask **13** comprising a plurality of strips separated from one another by a predetermined gap, real bridges **21** connecting adjacent strips to define slots **14**(or **20**), and first and second dummy bridges **14a**, **14b** (**22a**,**22b**) extending from adjacent strips toward each slot therebetween, said tension mask being installed to include a top surface of said tension mask facing a panel **2** forming a screen and being separated from said panel by a predetermined gap;

a plurality of support members **12** disposed at opposite sides of said tension mask;

and a plurality of rigid members **11** secured to opposite ends of said supporting members.

Ohmae fails to disclose a slot where a first etching boundary is formed at an end of said first dummy bridge near to the center of the tension mask being lower with respect to the screen than a second etching boundary formed at an end of said second dummy bridge near to the periphery of said tension mask.

However, in the same field of endeavor, Ueda discloses a shadow mask where a slot comprises a first etching boundary formed at an end of a strip near the center of the shadow mask

being lower with respect to the screen than a second etching boundary formed at an end of a second strip near to the periphery of said mask (see Fig. 5) with the purpose of intercepting or reducing the quantity of direct light directly incident thereto while allowing reflections form, e.g. the casing of an exposing device to pass therethrough. The mask is therefore free from the local omission of stripes ascribable to short exposure at its outermost edges, particular at its corner portions, enhancing the quality of a fluorescent surface (see Col. 4, lines 27-33). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a slot comprising a first etching boundary formed at an end of a strip near the center of the shadow mask being lower with respect to the screen than a second etching boundary formed at an end of a second strip near to the periphery of said mask in order to intercept or reduce the quantity of direct light directly incident thereto while allowing reflections form, e.g. the casing of an exposing device to pass therethrough. The mask is therefore free from the local omission of stripes ascribable to short exposure at its outermost edges, particular at its corner portions, enhancing the quality of a fluorescent surface.

The Examiner notes that Ohmae-Ueda provides a tension mask where at least a slot with dummy bridges comprises a first etching boundary being formed at an end of said first dummy bridge near to the center of the tension mask being lower with respect to the screen than a second etching boundary formed at an end of said second dummy bridge near to the periphery of said tension mask.

Regarding claim 2, Ohmae-Ueda discloses the vertical axis of an etched area at the upper end surfaces of said first and second dummy bridges being offset from the vertical center axis of an etched area at the lower end surfaces of said first and second dummy bridges toward the

center of said tension mask (see Fig. 1 of Ohmae in view of the rightmost drawing of Fig. 5 of Ueda).

Regarding claim 4, Ohmae-Ueda discloses an etched area at the upper most end surfaces of said first and second dummy bridges being wider than an etched area at the lower end surfaces of said first and second dummy bridges (see Ueda, Fig. 5).

Referring to claim 6, claim 6 is rejected over the reasons stated in the rejection of claim 1.

Referring to claims 7 and 9, claims 7 and 9 are rejected over the reasons stated in the rejection of claims 2 and 4, respectively.

3. Claims 1, 5, 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmae (Us 6,388,370) in view of Kobayashi et al. (2002/0014821).

Regarding claim 1, Ohmae discloses a tension mask assembly or a flat CRT comprising:

a tension mask **13** comprising a plurality of strips separated from one another by a predetermined gap, real bridges **21** connecting adjacent strips to define slots **14**(or **20**), and first and second dummy bridges **14a, 14b (22a,22b)** extending from adjacent strips toward each slot therebetween, said tension mask being installed to include a top surface of said tension mask facing a panel **2** forming a screen and being separated from said panel by a predetermined gap;

a plurality of support members **12** disposed at opposite sides of said tension mask;

and a plurality of rigid members **11** secured to opposite ends of said supporting members.

Ohmae fails to disclose a slot where a first etching boundary is formed at an end of said first dummy bridge near to the center of the tension mask being lower with respect to the screen than

Art Unit: 2879

a second etching boundary formed at an end of said second dummy bridge near to the periphery of said tension mask.

However, in the same field of endeavor, Kobayashi discloses a shadow mask where a slot comprises a first etching boundary formed at an end of a strip near the center of the shadow mask being lower with respect to the screen than a second etching boundary formed at an end of a second strip near to the periphery of said mask (see Fig. 3) with the purpose of preventing incorrect hitting of color electron beams caused by the local doming phenomenon from occurring and thus preventing displacement of colors, unevenness in colors, and deterioration of luminance form occurring (see paragraph [0011]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a slot comprising a first etching boundary formed at an end of a strip near the center of the shadow mask being lower with respect to the screen than a second etching boundary formed at an end of a second strip near to the periphery of said mask in order to prevent incorrect hitting of color electron beams caused by the local doming phenomenon from occurring and thus preventing displacement of colors, unevenness in colors, and deterioration of luminance form occurring.

The Examiner notes that Ohmae-Kobayashi provides a tension mask where at least a slot with dummy bridges comprises a first etching boundary being formed at an end of said first dummy bridge near to the center of the tension mask being lower with respect to the screen than a second etching boundary formed at an end of said second dummy bridge near to the periphery of said tension mask.

Regarding claim 5, Ohmae-Kobayashi discloses an etched area at an upper surface above the first etching boundary of said first dummy bridge being wider than an etched area at a lower

Art Unit: 2879

surface therebelow, and an etched area at a lower surface below the second etching boundary of said second dummy bridge being wider than an etched area at an upper surface thereabove (see Fig. 3 of Kobayashi).

Referring to claim 6, claim 6 is rejected over the reasons stated in the rejection of claim 1.

Referring to claim 10, claim 10 is rejected over the reasons stated in the rejection of claim 5.

Allowable Subject Matter

4. Claims 3 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 3, the references of the Prior Art of Record fail to teach or suggest the combination of the limitations as set forth in claim 3, and specifically comprising the limitation of “the amount of offset increases from the center of said tension mask toward the periphery of said tension mask”.

Referring to claim 8, claim 8 is allowable for the reasons given in claim 3.

Prior Art of Record

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Kim et al., in U.S. Patent Application Pub. 2002/0050777, discloses a mask with dummy bridges where the vertical axes of an upper and lower etched surfaces are offset toward the center of the mask and the etched area at the upper surfaces are wider than the lower etched surfaces.

Choe et al., in U.S. Patent Application Pub. 2001/0050524, discloses a tension mask with dummy bridges where an etched area at the upper surfaces of said bridges are wider than a lower etched surfaces.

Sato, in JP Patent No. 52-022474, discloses a mask with dummy bridges with improved electron transmittivity.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to German Colón whose telephone number is 703-305-5987. The examiner can normally be reached on Monday thru Friday, from 8:30 to 5:00.

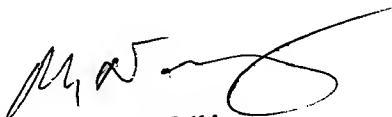
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 703-305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7382 for regular communications and 703-308-7382 for After Final communications.

Art Unit: 2879

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

gc

January 21, 2003


MICHAEL H. DAY
PRIMARY EXAMINER